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**YS**

**NONFERROUS METALS INDUSTRY STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**YS/T 904.5-2013**

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**Methods for chemical analysis of iron-chromium-aluminum  
fiber. Part 5: Determination of carbon and sulfur content.  
High-frequency infrared absorption method**

铁铬铝纤维丝化学分析方法 第5部分：碳、硫量的测定高频燃烧红外吸收法  
(English Translation)

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### Foreword

YS/T 904 "filament chemical analysis of iron chrome aluminum" includes a total of five sections.

- Part 1. Determination of nitrogen inert gas fusion thermal conductivity method;
- Part 2. chromium, aluminum content - Inductively coupled plasma atomic emission spectrometry;
- Part 3. silicon, manganese, titanium, copper, lanthanum, cerium content - Inductively coupled plasma atomic emission spectrometry;
- Part 4. Determination of phosphorus content - Molybdenum blue spectrophotometric method;
- Part 5. carbon, sulfur content was measured high-frequency combustion infrared absorption method.

This section YS/T Part 5 904.

This section drafted in accordance with GB/T 1.1-2009 given rules.

The non-ferrous metal part by the National Standardization Technical Committee (SAC/TC243) centralized.

This section is drafted. West Co., Ltd., Northwest Nonferrous Metal Research Institute, Guangzhou Nonferrous Metal Research Institute of metal materials.

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## Iron chrome aluminum fiber filament chemical analysis Part 5. carbon and sulfur contents -Frequency combustion infrared absorption method

### 1 Scope

YS/T of the provisions of section 904 of the determination of iron chrome aluminum fiber filament carbon and sulfur content.

This section applies to the determination of iron chrome aluminum and carbon fiber filaments in sulfur content, carbon content was measured in the range of 0.005% to 0.50%, sulfur content measurement range Circumference of 0.0005% to 0.050%.

### 2 Method summary

In an oxygen atmosphere, after high-frequency heating the sample, sulfur dioxide and carbon dioxide produced in the infrared cell were detected, a final calculated as the amount of carbon and sulfur content.

### 3 Reagents

#### 3.1

Tungsten flux ( $w(C) \leq 0.0005\%$ ,  $w(S) \leq 0.0005\%$ ).

#### 3.2

Ceramic crucible. Burning 2h cooled in a muffle furnace  $1000\text{ }^{\circ}\text{C} \sim 1100\text{ }^{\circ}\text{C}$  in to room temperature, placed in a desiccator save.

#### 3.3

oxygen (volume fraction  $\geq 99.5\%$ ).

#### 3.4

Standard sample. the sample should be used with a standard sample of carbon and sulfur closest, in principle, standard samples and chemical analysis of samples of similar composition.

### 4 Instrument

High-frequency infrared carbon and sulfur analyzer. Instrument sensitivity is not less than 0.00001%.

### 5 Sample

### **5.1**

sample uniform clastic samples.

### **5.2**

process to avoid sample contamination, do not allow any coolant.

## **6.1 Warm up**

To fully preheated before instrumental analysis, so that the indicators of the instrument reaches the set value.

## **6.2 Instrument Leak**

Leak detection program to determine the use of the instrument no air leaks.